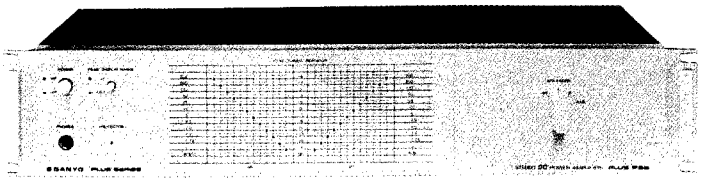
SERVICE MANUAL

SANYO

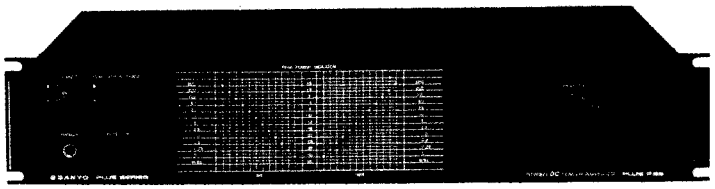
FET STEREO POWER AMPLIHER

PLUS P55

(EUROPE)



SILVER



BLACK

SPECIFICATIONS

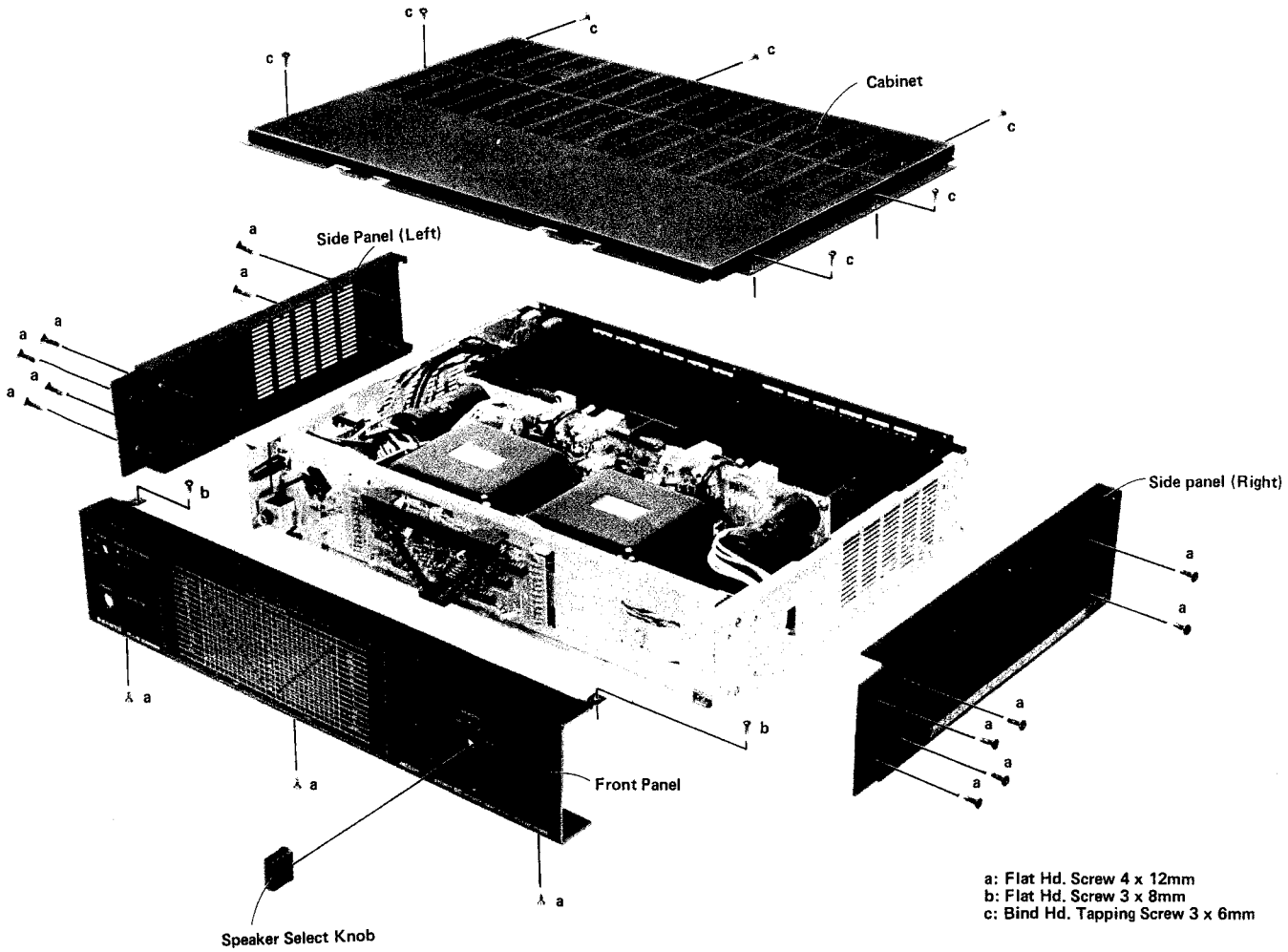
Continuous power (at 8 ohms)	(NORMAL)	100 watts x 2 (0.009% distortion)
	(STRAPPED MONO)	200 watts (0.03% distortion)
Intermodulation distortion (60Hz:7kHz – 4:1)	(NORMAL)	0.009% (100W output, 8 ohms)
	(STRAPPED MONO)	0.03% (200W output, 8 ohms)
Transient resphonse: Slew rate	(NORMAL)	150V/μsec
Damping factor	(NORMAL)	60 (at 1kHz, 8 ohms)
	(STRAPPED MONO)	40
Input sensitivity and impedance	(NORMAL)	1V/47 kohms
	(STRAPPED MONO)	0.7V/47 kohms
Frequency response	(NORMAL)	DC – 100kHz (+0dB, –1dB) (1W output, 8 ohms)
	(STRAPPED MONO)	DC – 100kHz (+0dB, –2dB)
Signal to noise ratio	(NORMAL)	110dB
Power requirements		AC: 220V, 50Hz
Power consumption		540W
Dimensions		Approx. 440 (W) x 320 (D) x 88 (H) mm (17-3/8" x 12-9/16" x 3-1/2")
Weight		Approx. 12kg (27 lbs.)

* Specifications are subject to change without notice.

HOW TO REMOVE THE CABINET AND PANELS

Be sure to have the power cord pulled out from the consent.

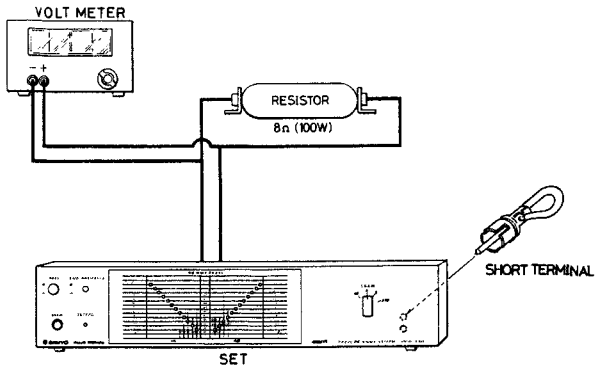
1) Unscrew 12 (flat head 4 x 12 mm) screws fastening both side panels.
2) Remove five (two flat head 4 x 12 mm and three flat head tapping 3 x 8 mm) screws fastening the front panel.
3) As the head less w/Hex hole 3 x 4 mm screw fastening the speaker change-over switch is unscrewed, the front panel can then be removed.
4) As seven (baind head tapping 3 x 6 mm) screws fastening the cabinet are unscrewed, the surroundings of the set amounts to being removed.

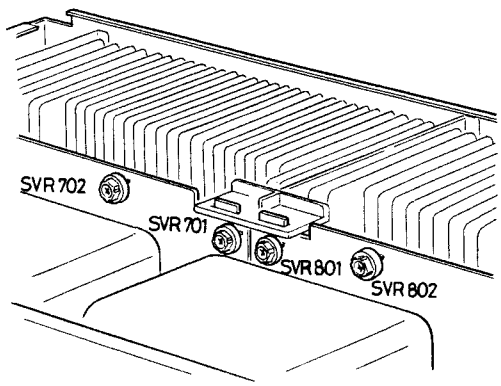

Cabinet
Side Panel (Left)
Side panel (Right)
Front Panel
Speaker Select Knob
a: Flat Hd. Screw 4 x 12mm
b: Flat Hd. Screw 3 x 8mm
c: Bind Hd. Tapping Screw 3 x 6mm

ADJUSTMENT

Middle Point Potential Adjustment

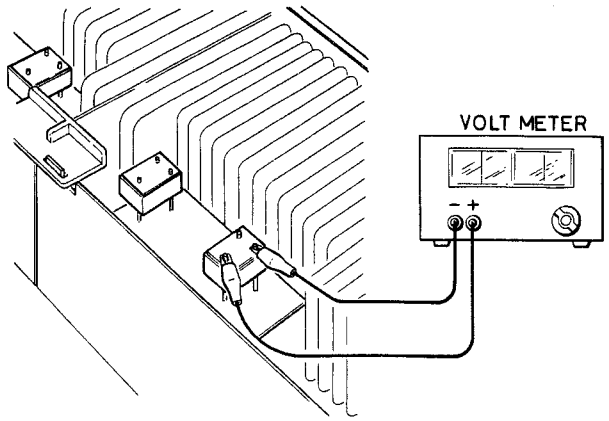
1) Set the output display change-over switch in the "x1" position; the mode switch, the "STEREO" position; and the speaker switch, the "A" position, respectively.
2) Short circuit the main amp. input terminals (MAIN IN) as shown in the figure to achieve the state of short of the input.
3) Connect a 8-ohm (100 W) resistor and digital voltmeter to the speaker output terminals (SPEAKERS) "A".
4) Turn on the power switch, and adjust semifixed resistor SVR701 (SVR801) so that the indicated value of the digital voltmeter becomes within 10 mV.





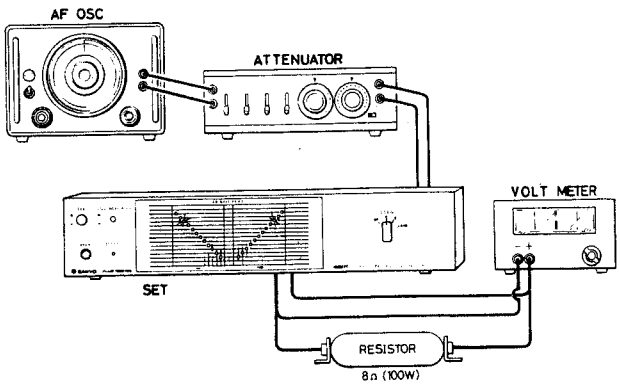
Power Stage Current Adjustment

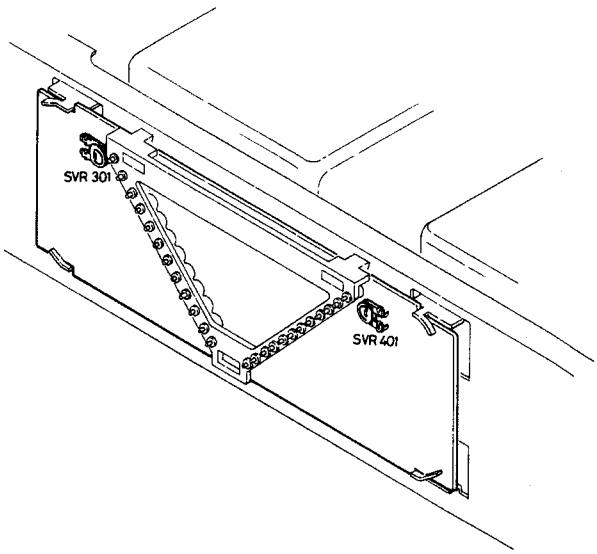
1) Achieve the state of short of the input.
2) Adjust resistor SVR702 so that the sum of voltages of R735 both ends and R734 both ends of the cemented resistor becomes 50 mV. (Keeping either of the two – R735 and R736 – fixed, adjust so that the sum total of values appeared becomes 50 mV.)
3) Confirm that the sum of voltages of R737 both ends and R738 both ends of the cemented resistor has become 50 mV.
4) Next, adjust resistor SVR802 so that the sum of voltages of both ends of R835 and R836 becomes 50 mV.
5) Similar to Step 3, confirm that the sum of voltages of R837 and R838 has become 50 mV.



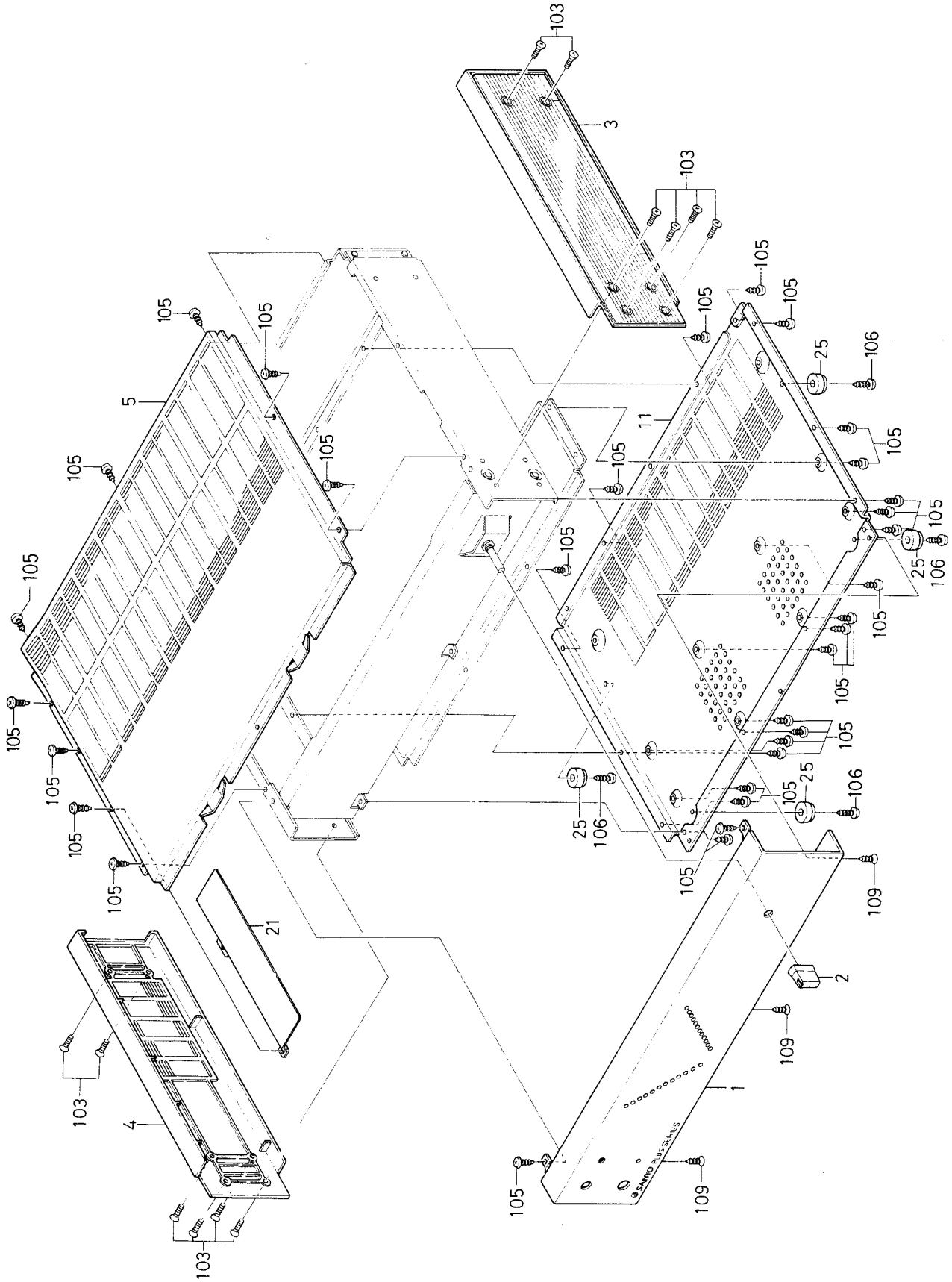
Adjustment of Level Meter

1) Introduce 1 kHz input to the set, and adjust so that its output becomes 100 W. (If voltage of a 8-ohm resistor is 28.3 V, this is also acceptable.)
2) Adjust resistors SVR301 and SVR401 so that a red LED, third from the top, of the LED level meter lights up.





CABINET EXPLODED VIEW



PARTS LIST

Key No.	Part No.	Description	Q'ty
PACKING			
	141-6-133T-10304	Individual Carton (Silver)	1
	141-6-133T-10302	Individual Carton (Black)	1
	141-6-144T-61000	Form Plastic Case, Left	1
	141-6-144T-61100	Form Plastic Case, Right	1
	141-6-231T-45600	Inner Polye Cover, Set	1
	141-6-231T-25350	Inner Polye Cover, Inst. M	1
ACCESSORY			
	141-6-410T-42600	Instraction Manual	1
	141-0-271T-16400	Bracket Ass'y, Handle	2
	141-2-171T-16500	Handle	2
		Flat Hd. Screw 3x14	4
	4-243T-13374	Lead Cord, RCA – RCA	1
CABINET			
1	141-0-122T-32930	Front Panel Ass'y (Silver)	1
	141-0-122T-32900	Front Panel Ass'y (Black)	1
2	141-0-163T-63600	Rotary Knob Ass'y (Silver)	1
	141-0-163T-63630	Rotary Knob Ass'y (Black)	1
3	141-0-123T-05530	Side Panel Ass'y (Silver)	1
	141-0-123T-05501	Side Panel Ass'y (Black)	1
4	141-0-123T-05630	Side Panel Ass'y (Silver)	1
	141-0-123T-05601	Side Panel Ass'y (Black)	1
5	141-0-111T-42930	Cabinet Ass'y (Silver)	1
	141-0-111T-42900	Cabinet Ass'y (Black)	1
CHASSIS			
11	141-2-125T-19400	Bottom Lid	1
12	141-2-214T-04800	Bracket, Frame	1
13	141-2-315T-21200	Reinforcement, Right	1
14	141-2-315T-21300	Reinforcement, Left	1
15	141-2-315T-21400	Reinforcement, Power Trans	1
16	141-2-119T-00331	Back Panel (Silver)	1
	141-2-119T-00301	Back Panel (Black)	1
17	141-2-368T-19000	Heat Sink	1
18	141-2-210T-19900	Bracket, Amp Center	1
19	141-2-210T-20000	Bracket, Amp Side	2
20	141-2-210T-20200	Bracket, Capacitor	2
21	141-2-310T-38500	Bracket, Fuse	1
22	141-2-310T-35600	Bracket, Headphone	1
23	141-2-310T-35700	Bracket, Range Switch	1
24	141-2-310T-35800	Bracket, Power Switch	1
25	141-0-174T-05101	Stand Ass'y	4
26	141-0-161T-74130	Push Button Ass'y (Silver)	1
	141-0-161T-74100	Push Button Ass'y (Black)	1
27	141-0-156T-21700	Knob Ass'y (Silver)	1
	141-0-156T-21730	Knob Ass'y (Black)	1
28	141-2-464T-14400	Fixer, AC Cord	1
29	141-2-135T-66800	Cover	1
30	141-2-453T-02600	Washer 4x8x0.5	1
31	141-2-453T-01200	Washer 3x8x1	6
HARDWARE			
101		Screw Pan Hd. 2.6x6mm	2
102		Screw Pan Hd. 3x18mm	16
103		Flat Hd. 4x12mm	12
105		Bind Hd. Tapping 3x6mm	39
106		Bind Hd. Tapping 3x8mm	32
107		Bind Hd. Tapping 3x12mm	2
108		Bind Hd. Tapping 4x10mm	8
109		Flat Hd. 3x8mm	3
110		Washer 3mm	16
111		Pan Hd. Tapping W/Washer 3x8mm	4
112		External Tooth Washer 2.6mm	2

Key No.	Part No.	Description	Q'ty
ELECTRICAL PARTS			
51	4-300T-13000	Power Trans, L Channel	1
52	4-300T-13100	Power Trans, R Channel	1
53	4-243T-77172	Power Cord	1
54	4-237T-07000	Terminal Board, Speaker	2
55	141-2-382T-07000	Terminal, Ground	1
57	4-209T-01172	Posistor	2
58		Transistor FET 23K134	4
59		Transistor FET 2SJ49	4
60	4-235T-44871	Socket, Headphon W/Nut	1
61	123-2-472R-00401	Lug, C931, 932	4
62		Ceramic Cap. 0.047μF 50V +80–20%	2
63	141-4-464T-20600	Fixer	5
64	141-4-464T-20671	Fixer	1
POWER AMP (L) PCB ASS'Y			
81	141-4-233T-30771	P.C Board Ass'y, Power Amp L	1
	4-235T-80200	Socket 4P	1
	4-235T-79900	Socket 3P	1
	4-236T-10274	Plug 3P-25P	1
	4-236T-13472	Pulg 3P	1
SVR701	4-222T-62071	Semifixed Variable Resistor 100 ohm	1
SVR702	4-222T-62073	Semifixed Variable Resistor 220 ohm	1
	4-232T-05200	Relay, 24V	2
Q701		Transistor FET 2SK150	1
Q702		Transistor 2SC2291	1
Q703,704		Transistor 2SD755	2
Q706,707, 708		Transistor 2SB648A	3
Q709,710		Transistor 2SD668A	2
Q705,601, 602,603		Transistor 2SC945	4
Q604		Transistor 2SD438	1
D731		Diode M4C51	1
D608,609		Diode 1N4003	2
D701		Zener Diode XZ162	1
D702		Zener Diode XZ200	1
D607		Diode YZ047	1
D703,601, 602,603, 604,605, 606		Diode DS442 X	7
	CAPACITORS		
C601		Electrolytic 100μF 25V Nonpolar	1
C602		Electrolytic 220μF 10V	1
C704		Electrolytic 47μF 35V	1
C708		Electrolytic 47μF 25V	1
C702		Ceramic 15pF 500V ±10%	1
C712		Ceramic 10pF 500V ±10%	1
C733,734, 735,736		Ceramic 0.01μF 500V +100–0%	4
C711,706		Ceramic 47pF 50V ±10%	2
C705		Ceramic 15pF 50V ±10%	1
C701		Mylar 470pF 50V ±10%	1
C703		Mylar 0.001μF 50V ±10%	1
C731,732		Electrolytic 10000μF 63V	2
C710,711		Electrolytic 47μF 63V	2
C709		Electrolytic 10μF 25V	1
	RESISTORS		
R708,719		Solid 5.6K ohm ±10% 1/2W	2
R925,926		Solid 4.7K ohm ±10% 1/2W	2
R727,728		Solid 8.2K ohm ±10% 1/2W	2
R703		Carbon 56K ohm ±5% 1/4W	1
R604,605, 620		Carbon 47K ohm ±5% 1/4W	3
R601,602, 603		Carbon 33K ohm ±5% 1/4W	3
R608,609		Carbon 18K ohm ±5% 1/4W	2

Key No.	Part No.	Description	Q'ty
POWER AMP (L) PCB ASS'Y			
R705,706		Carbon 15K ohm ±5% 1/4W	2
R606,607		Carbon 56K ohm ±5% 1/4W	2
R722		Carbon 5.6K ohm ±5% 1/4W	1
R710,711		Carbon 4.7K ohm ±5% 1/4W	2
R707		Carbon 3.9K ohm ±5% 1/4W	1
R718		Carbon 3.3K ohm ±5% 1/4W	1
R721		Carbon 2.7K ohm ±5% 1/4W	1
R720		Carbon 2.2K ohm ±5% 1/4W	1
R701,702, 704		Carbon 560 ohm ±5% 1/4W	3
R709		Carbon 150 ohm ±5% 1/4W	1
R724		Carbon 56 ohm ±5% 1/4W	1
R611		Carbon 100 ohm ±5% 1/4W	1
R712,713		Carbon 82 ohm ±5% 1/4W	2
R716,717		Carbon 82 ohm ±5% 1/4W	2
R612		Carbon 15K ohm ±5% 1/4W	1
R714,715		Carbon 1K ohm ±5% 1/4W	2
R725,726, 723		Carbon 100 ohm ±5% 1/4W	3
POWER AMP (R) PCB ASS'Y			
82	141-4-233T-30871	P.C. Board Ass'y, Power Amp. R	1
	4-235T-80271	Socket 4P	1
	4-235T-79900	Socket 3P	1
	4-236T-13475	Plug 6P	1
SVR801	4-222T-62071	Semifixed Variable Resistor 100 ohm	1
SVR802	4-222T-62073	Semifixed Variable Resistor 220 ohm	1
	141-2-368T-13801	Heat Sink	1
	141-2-243T-09800	Base	2
	141-2-327T-18200	Insulator	2
Q801		Transistor FET 2SK150	1
Q802		Transistor 2SC2291	1
Q803,804		Transistor 2SD755	2
Q806,807, 808		Transistor 2SB648A	3
Q809,810		Transistor 2SD668A	2
Q914		Transistor 2SA1019	1
Q913		Transistor 2SC2375	1
Q804		Transistor 2SC945	1
Q912		Transistor 2SB677	1
Q911		Transistor 2SD687	1
D831		Diode M4C51	1
D910		Diode W02	1
D801		Zener Diode XZ162	1
D802,911, 912		Zener Diode XZ200	3
D803		Diode DS442 X	1
	CAPACITORS		
C804		Electrolytic 47μF 35V	1
C808,917, 918		Electrolytic 47μF 25V	3
C809		Electrolytic 10μF 25V	1
C802		Ceramic 15pF 500V ±10%	1
C812		Ceramic 10pF 500V ±10%	1
C833,834, 835,836, 912		Ceramic 0.01μF 500V +100–0%	5
C811,706		Ceramic 47pF 50V ±10%	2
C919,920		Ceramic 0.01μF 50V +80–20%	2
C802		Ceramic 15pF 50V ±10%	1
C801		Mylar 470pF 50V ±10%	2
C803		Mylar 0.001μF 50V ±10%	1
C831,832		Electrolytic 10000μF 63V	2
C913,914		Electrolytic 220μF 100V	2
C810,811		Electrolytic 47μF 63V	2
C915,916		Electrolytic 47μF 100V	2

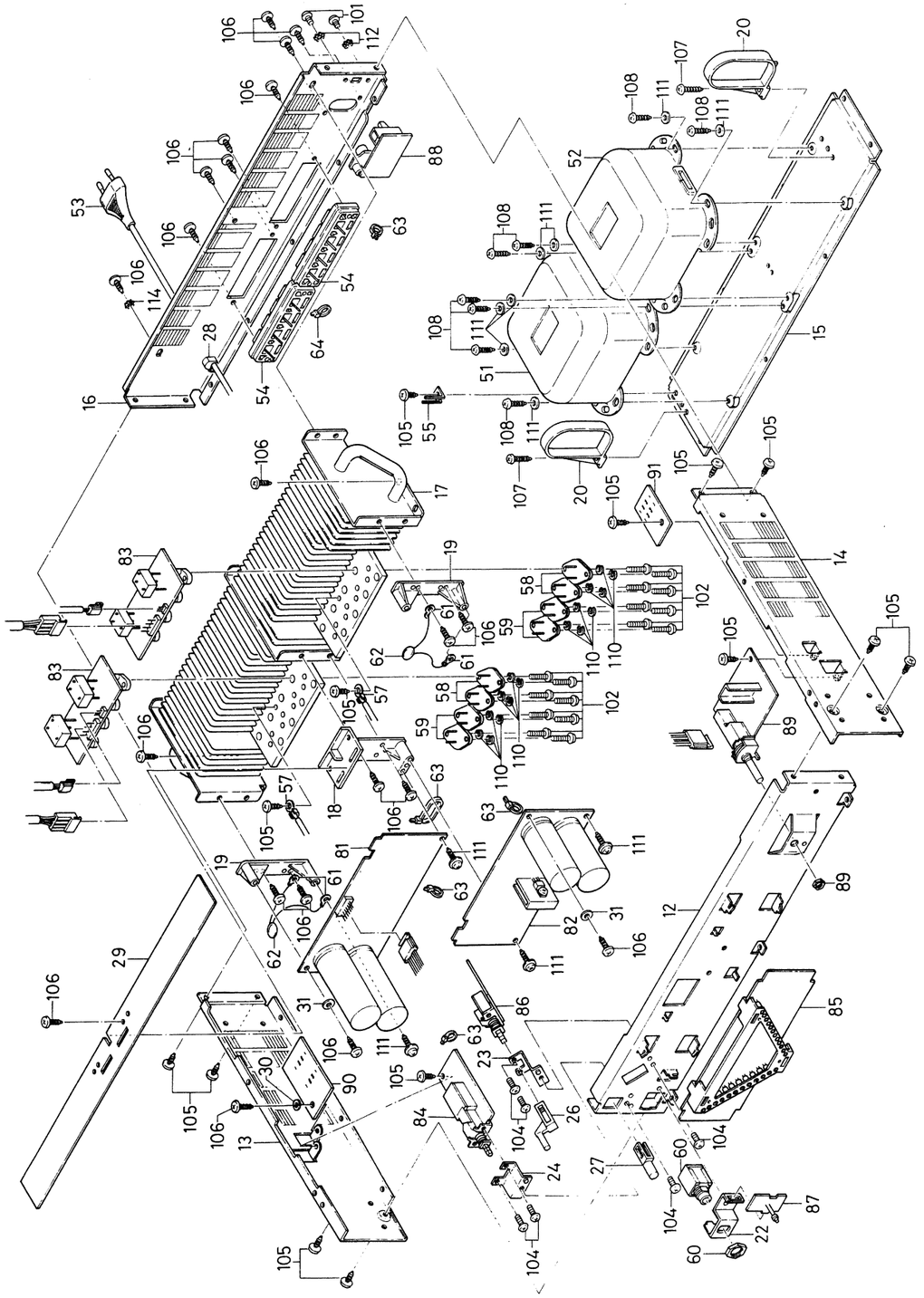
Key No.	Part No.	Description	Q'ty
POWER AMP (R) PCB ASS'Y			
	RESISTORS		
R808,819		Solid 5.6K ohm ±10% 1/2W	2
R827,828		Solid 8.2K ohm ±10% 1/2W	2
R803		Carbon 56K ohm ±5% 1/4W	1
R805		Carbon 15K ohm ±5% 1/4W	1
R921,922		Carbon 12K ohm ±5% 1/4W	2
R913,914		Carbon 10K ohm ±5% 1/4W	2
R917,918		Carbon 8.2K ohm ±5% 1/4W	2
R822		Carbon 5.6K ohm ±5% 1/4W	1
R810,811		Carbon 4.7K ohm ±5% 1/4W	2
R807,915, 916		Carbon 3.9K ohm ±5% 1/4W	3
R818		Carbon 3.3K ohm ±5% 1/4W	1
R821		Carbon 2.7K ohm ±5% 1/4W	1
R820		Carbon 2.2K ohm ±5% 1/4W	1
R801,802, 804		Carbon 560 ohm ±5% 1/4W	3
R809		Carbon 150 ohm ±5% 1/4W	1
R824		Carbon 56 ohm ±5% 1/4W	1
R812,813		Carbon 82 ohm ±5% 1/4W	2
R816,817		Carbon 82 ohm ±5% 1/4W	2
R814,815		Carbon 1K ohm ±5% 1/4W	2
R825,826, 823		Carbon 100 ohm ±5% 1/4W	3
R911,912, 923,924		Carbon 5.6 ohm ±5% 1/4W	4
R919,920		Metal 20K ohm ±1% 1/4W	2
POWER FET PCB ASS'Y			
83	141-4-233T-30971	P.C. Board Ass'y, Power FET	1
	4-235T-80300	Socket	4
	4-236T-12971	Plug 4P	1
	4-236T-10200	Plug	1
L701	4-265T-05800	VHF Coil	1
Q711		Transistor 2SC2320	1
Q712		Transistor 2SA999	1
D711,712, 713,714		Diode DS442 X	4
	CAPACITORS		
C721,722		Mylar 0.0082μF 50V ±20%	2
C725		Mylar 0.047μF 50V ±20%	1
C723,724		Electrolytic 0.047μF 150V	2
	RESISTORS		
R743		Metal 10 ohm ±5% 1W	1
R742		Metal 5.6 ohm ±5% 2W	1
R739,740		Carbon 1K ohm ±5% 1/4W	2
R731,732, 733,734		Carbon 330 ohm ±5% 1/4W	4
R735,736, 737,738	4-221T-03600	Resistor 0.47 ohm 5W×2	2
POWER SWITCH PCB ASS'Y			
84	141-4-233T-31003	P.C. Board Ass'y, Power Switch	1
	4-238T-07973	Push Switch	1
	4-223T-04773	Capacitor 0.01μF	2
LED/DRIVE PCB ASS'Y			
85	141-4-233T-31200	P.C. Board Ass'y, LED/Drive	1
	141-2-210T-19800	Bracket	1
	4-235T-80000	Socket 6P	1
SVR301, 401	4-222T-39575	Semifixed Variable Resistor	2
IC301, 401		IC NJM 4558D / IC RC4558P } or	2

PARTS LIST

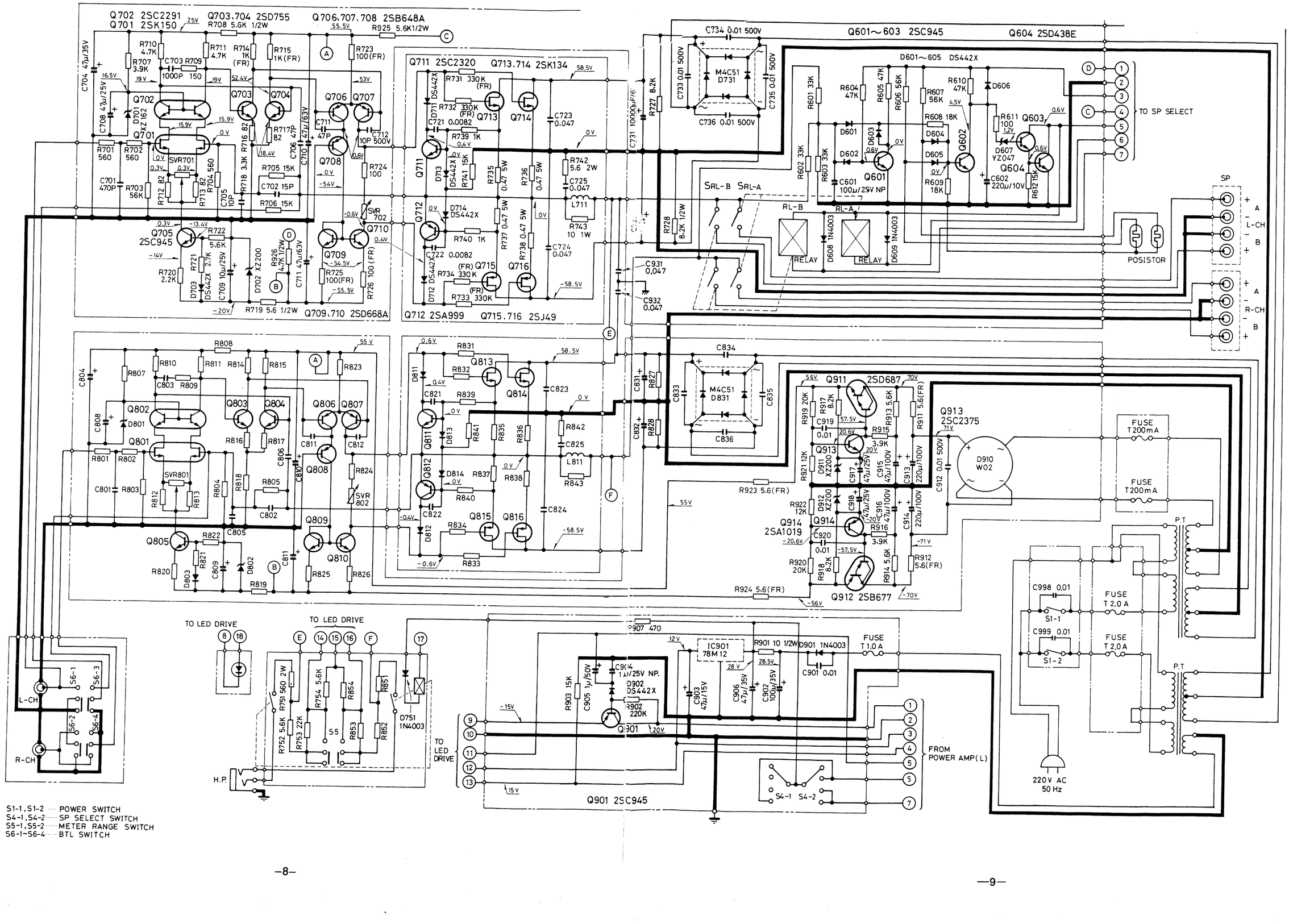
Key No.	Part No.	Description	Q'ty
LED/DRIVE PCB ASS'Y			
IC302 ~ 304, 402 ~ 404		IC LM324N	6
D301,302, 303,401, 402,403 304		Diode DS442 X	7
LED304 ~ 312, 404 ~ 412		LED SLP244B B Green	18
LED301 ~ 303, 401 ~ 403		LED SLP144B B Red	6
	CAPACITORS		
C302,905, 906,402, 303,403		Electrolytic 1μF 50V	6
C301,401		Ceramic 100pF 50V ±10%	2
	RESISTORS		
R308,408		Metal 10K ohm ±10% 1/4W	2
R306,307, 308,406, 407,408		Metal 20K ohm ±10% 1/4W	6
R309,409		Carbon 100K ohm ±5% 1/4W	2
R304,303, 404,403		Carbon 15K ohm ±5% 1/4W	4
R310,311, 410,411		Carbon 10K ohm ±5% 1/4W	4
R324,424		Carbon 2.2K ohm ±5% 1/4W	2
R334,335, 336,434, 435,436		Carbon 2.2K ohm ±5% 1/4W	6
R323,423		Carbon 1.5K ohm ±5% 1/4W	2
R322,422		Carbon 1.2K ohm ±5% 1/4W	2
R325,326, 327,425, 426,427		Carbon 1.2K ohm ±5% 1/4W	6
R328,329, 330,428, 429,430		Carbon 1.2K ohm ±5% 1/4W	6
R331,332, 333,431, 432,433		Carbon 1.2K ohm ±5% 1/4W	6
R321,421		Carbon 1K ohm ±5% 1/4W	2
R301		Carbon 2.2K ohm ±5% 1/4W	1
R320,420		Carbon 470 ohm ±5% 1/4W	2
R319,419		Carbon 330 ohm ±5% 1/4W	2
R318,418		Carbon 270 ohm ±5% 1/4W	2
R314,414		Carbon 180 ohm ±5% 1/4W	2
R317,417		Carbon 150 ohm ±5% 1/4W	2
R315,316, 415,416		Carbon 100 ohm ±5% 1/4W	4
R313,413		Carbon 47K ohm ±5% 1/4W	2
R312,412		Carbon 2.2K ohm ±5% 1/4W	2
METER RANGE PCB ASS'Y			
86	141-4-233T-31300	P.C. Board Ass'y, Meter Range	1
S5	4-238T-02800	Push Switch	1
	4-232T-04500	Relay	1
D751		Diode 1N4003	1
R751,851		Metal Res. 560 ohm ±5% 2W	2
R753,853		Carbon 22K ohm ±5% 1/4W	2
R752,852, 754,854		Carbon 5.6K ohm ±5% 1/4W	4
LED PCB ASS'Y			
87	141-4-233T-31400	P.C. Board Ass'y LED	1
		LED SLP144B Red	1
	141-2-352T-43500	Spacer	1

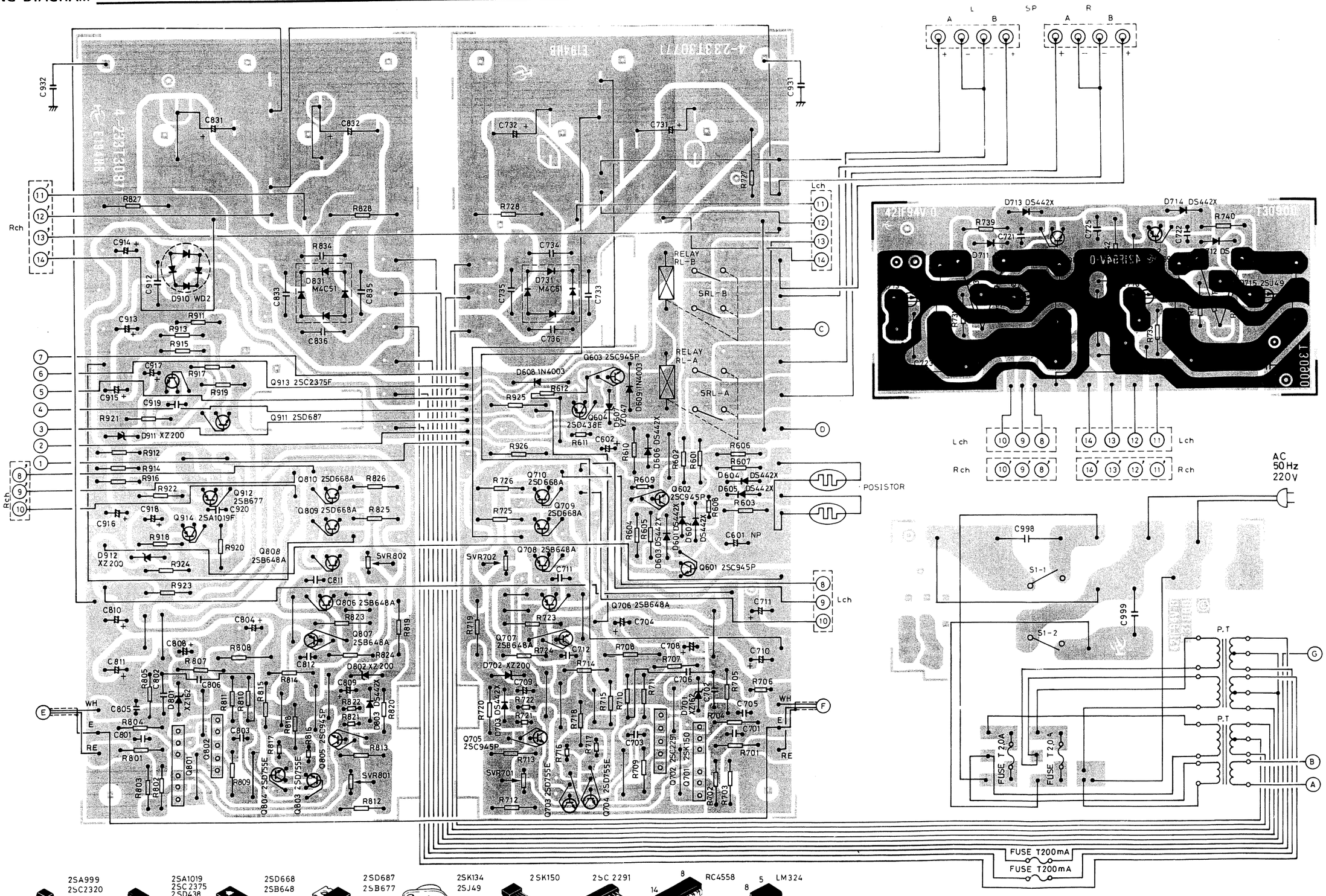
Key No.	Part No.	Description	Q'ty
SWITCH PCB ASS'Y			
88	141-4-233T-31600	P.C. Board Ass'y, Switch	1
S6	4-231T-41872	Slide Switch	1
	4-235T-68571	Socket 2P	1
SPEAKER SWITCH PCB ASS'Y			
89	141-4-233T-31571	P.C. Board Ass'y, Speaker Switch	1
S4	4-238T-11600	Rotary Switch	1
	141-2-368T-11000	Heat Sink	1
	4-236T-10273	Plug	1
	4-235T-80100	Socket 7P	1
	4-234T-04471	Fuse 1A	1
	141-2-381T-04200	Bracket Fuse	2
IC901		IC NJM78M 12A1	1
Q901		Transistor 2SA999	1
D901		Diode 1N4003	1
D902		Diode DS442 X	1
	CAPACITORS		
C902		Electrolytic 100μF 35V	1
C903		Electrolytic 47μF 16V	1
C906		Electrolytic 47μF 35V	1
C901		Ceramic 0.01μF +80—20% 50V	1
C905		Electrolytic 1μF 50V	1
C904		Electrolytic 1μF (Nonpolora) 50V	1
	RESISTORS		
R901		Metal 10 ohm ±5% 1/2W	1
R902		Carbon 220K ohm ±5% 1/4W	1
R903		Carbon 15K ohm ±5% 1/4W	1
R907		Metal 470 ohm ±5% 1/2W	1
PRIMARY FUSE PCB ASS'Y			
90	141-4-233T-48000	P.C. Board Ass'y, Primary Fuse	1
	4-234T-03671	Fuse 2A	2
	141-2-381T-04200	Bracket, Fuse	4
	141-6-476T-13200	Indication Label	2
SECONDARY FUSE PCB ASS'Y			
91	141-4-233T-48100	P.C. Board Ass'y, Secondary Fuse	1
	4-234T-04001	Fuse 200mA	2
	141-2-381T-04200	Bracket Fuse	4
	141-6-476T-13600	Indication Label	1

CHASSIS EXPLODED VIEW



SCHEMATIC DIAGRAM




L
SP
R
A
B
Lch
Rch
POSISTOR
RELAY RL-B
RELAY RL-A
SRL-B
SRL-A
D713 DS442X
D714 DS442X
R739
R740
C721
C722
C725
D711
D712 DS
Q715 2SJ49
T300
AC 50Hz 220V
C998
C999
S1-1
S1-2
P.T
FUSE T 2.0A
FUSE T 2.0A
FUSE T200mA
FUSE T200mA
C932
C931
C831
C832
C732
C731
R727
R827
R828
R728
C914
C912
D910 WD2
R834
C833
D831 M4C51
C835
C836
C735
D731 M4C51
C733
C736
C913
R911
R913
R915
C917
R917
R919
C915
C919
R921
Q911 2SD687
D911 XZ200
R912
R914
R916
R922
Q912 2SB677
C920
Q914 2SA1019F
C916
C918
R918
R920
D912 XZ200
R924
Q808 2SB648A
R923
C810
C804
C808
R808
C811
R807
C812
R824
R823
Q806 2SB648A
R819
Q807 2SB648A
D802 XZ200
C809
D803 DS442X
R820
R822
R821
R813
SVR801
R812
C805
R804
C801
R801
R803
R802
Q801
Q802
C803
R809
R805
C802
D801 XZ162
R811
R810
R815
R814
R816
R817
Q804 2SD755E
Q803 2SD755E
Q805 2SC945P
Q810 2SD668A
R826
Q809 2SD668A
R825
SVR802
C811
C806
C807
WH
E
RE
Q913 2SC2375F
R926
R726
Q710 2SD668A
Q709 2SD668A
R725
SVR702
Q708 2SB648A
C711
R719
Q706 2SB648A
C704
Q707 2SB648A
R724
R723
C712
D702 XZ200
C709
R722
R721
R720
D703 DS442X
Q705 2SC945P
R713
SVR701
R712
Q703 2SD755E
Q704 2SD755E
R716
R717
R718
R715
R710
R711
R708
C708
R707
C706
C703
R709
Q702 2SC2291
Q701 2SK150
D701 XZ162
C702
R702
R703
C705
R704
R705
R706
C710
C701
R701
D608 1N4003
R612
Q603 2SC945P
D609 1N4003
Q604 2SD438E
R611
C602
R610
D606 DS442X
R602
R608
R606
R607
D604 DS442X
D605 DS442X
Q602 2SC945P
R609
R603
R606
R604
R605
D601 DS442X
D602 DS442X
D603 DS442X
C601 NP
Q601 2SC945P
R727
R728
C734
C731
C732
C733
C735
C736
C831
C832
C833
C835
C836
C911
C912
C913
C914
C915
C916
C917
C918
C919
C920
C931
C932
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R913
R914
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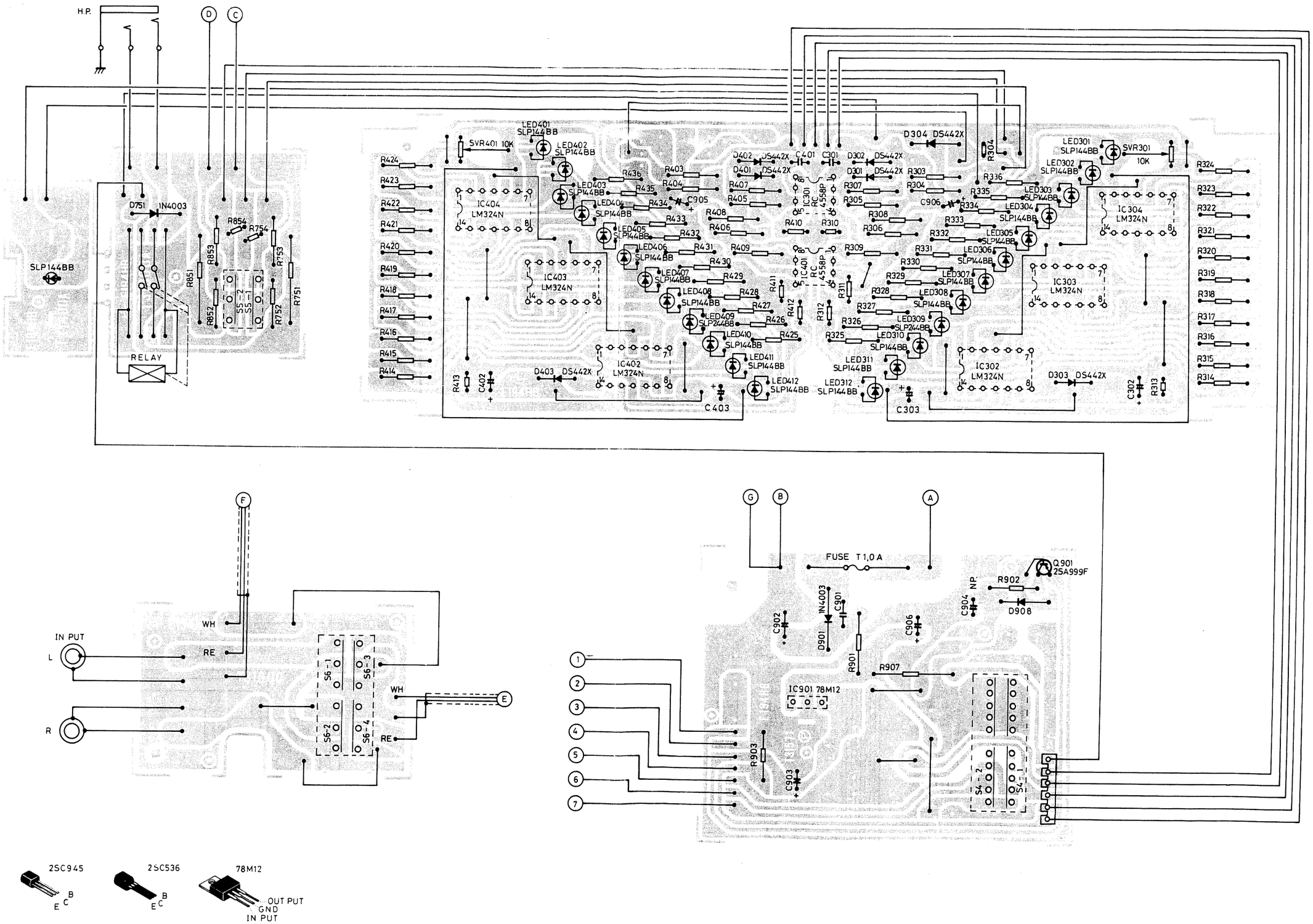
R916
R917
R918
R919
R920
R921
R922
R923
R924
R925
R926
R927
R928

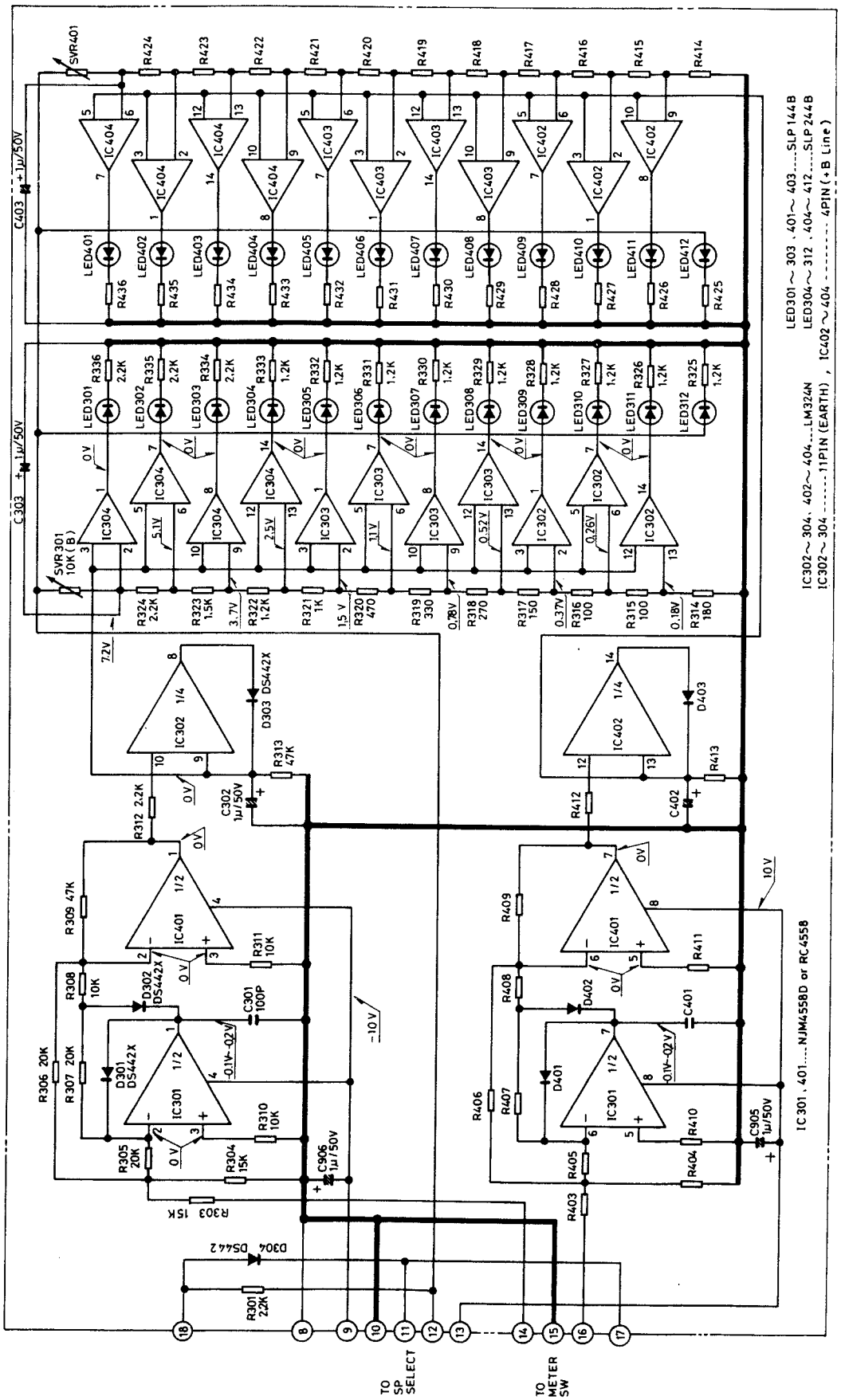
2SA999
2SC2320
2SA1019
2SC2375
2SD438
2SD755
2SD668
2SB648
2SD687
2SB677
2SK134
2SJ49
2SK150
2SC 2291
RC4558
LM324


H.P.
D
C
D751 IN4003
SLP144BB
R854
R754
R853
R753
R851
R852
R752
R751
S5-2
S5-1
RELAY
LED401 SLP144BB
SVR401 10K
LED402 SLP144BB
IC404 LM324N
LED403 SLP144BB
LED404 SLP144BB
LED405 SLP144BB
LED406 SLP144BB
LED407 SLP144BB
LED408 SLP144BB
LED409 SLP144BB
LED410 SLP144BB
LED411 SLP144BB
LED412 SLP144BB
IC403 LM324N
IC402 LM324N
D403 DS442X
C402
C403
R413
R424
R423
R422
R421
R420
R419
R418
R417
R416
R415
R414
R436
R435
R434
R433
R432
R431
R430
R429
R428
R427
R426
R425
R403
R404
C905
R405
R408
R406
R409
R410
R411
R412
D402 DS442X
D401 DS442X
C401
C301
IC401 RC 4558P
IC301 RC 4558P
D302 DS442X
D301 DS442X
R307
R305
R308
R306
R310
R309
R311
R312
R303
R304
R305
C906
R335
R334
R333
R332
R331
R330
R329
R328
R327
R326
R325
D304 DS442X
R304
LED311 SLP144BB
LED312 SLP144BB
C303
IC302 LM324N
D303 DS442X
C302
R313
LED301 SLP144BB
SVR301 10K
LED302 SLP144BB
LED303 SLP144BB
LED304 SLP144BB
LED305 SLP144BB
LED306 SLP144BB
LED307 SLP144BB
LED308 SLP144BB
LED309 SLP144BB
LED310 SLP144BB
IC304 LM324N
IC303 LM324N
R324
R323
R322
R321
R320
R319
R318
R317
R316
R315
R314

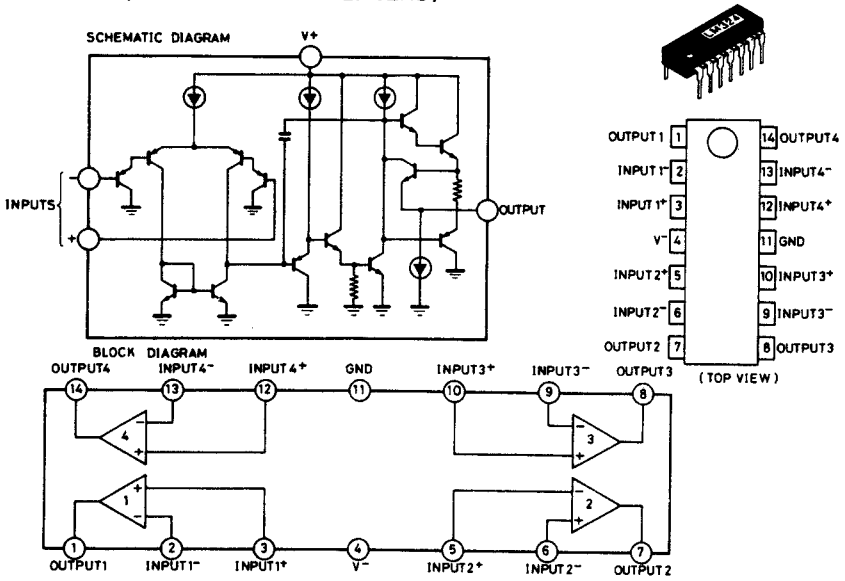
F
WH
IN PUT
L
RE
R
S6-1
S6-3
S6-2
S6-4
WH
E
RE

G
B
A
FUSE T1,0 A
Q901 2SA999F
R902
N.P.
C904
D908
C902
IN4003
C901
D901
R901
C906
R907
IC901 78M12
R903
C903
S4-2
S4-1
1
2
3
4
5
6
7

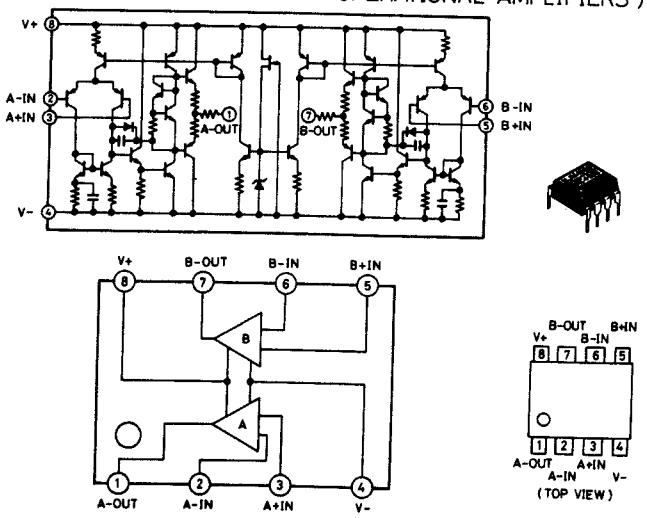
2SC945
B
E C
2SC536
B
E C
78M12
OUT PUT
GND
IN PUT


SVR401
C403 +1μ/50V
C303 +1μ/50V
SVR301 10K(B)
LED301 R336 2.2K
LED302 R335 2.2K
LED303 R334 2.2K
LED304 R333 1.2K
LED305 R332 1.2K
LED306 R331 1.2K
LED307 R330 1.2K
LED308 R329 1.2K
LED309 R328 1.2K
LED310 R327 1.2K
LED311 R326 1.2K
LED312 R325 1.2K
LED401 R436
LED402 R435
LED403 R434
LED404 R433
LED405 R432
LED406 R431
LED407 R430
LED408 R429
LED409 R428
LED410 R427
LED411 R426
LED412 R425
R424 R423 R422 R421 R420 R419 R418 R417 R416 R415 R414
IC404 IC403 IC402 IC304 IC303 IC302
R324 2.2K
R323 1.5K
R322 1.2K
R321 1K
R320 470
R319 330
R318 270
R317 150
R316 100
R315 100
R314 180
IC302 1/4
IC401 1/2
IC301 1/2
D303 DS442X
D302 DS442X
D301 DS442X
D304 DS442
D403
D402
D401
R313 47K
R312 2.2K
R309 47K
R308 10K
R306 20K
R307 20K
R305 20K
R311 10K
R310 10K
R304 15K
R303 15K
R301 22K
R412
R413
R409
R408
R406
R407
R411
R410
R405
R404
R403
C302 1μ/50V
C402
C301 100P
C401
C906 1μ/50V
C905 1μ/50V
7.2V
0V
-10V
10V
-0.1V~-0.2V
0.1V~0.2V
5.1V
2.5V
1.1V
0.52V
0.26V
0.78V
0.37V
0.18V
3.7V
1.5V
LED301～303 . 401～403 ....SLP144B
LED304～312 . 404～412 ....SLP244B
IC302～304、402～404 ...LM324N
IC302～304 -------11PIN (EARTH) , IC402～404 -------4PIN (+B Line)
IC301、401....NJM4558D or RC4558
TO SP SELECT
TO METER SW

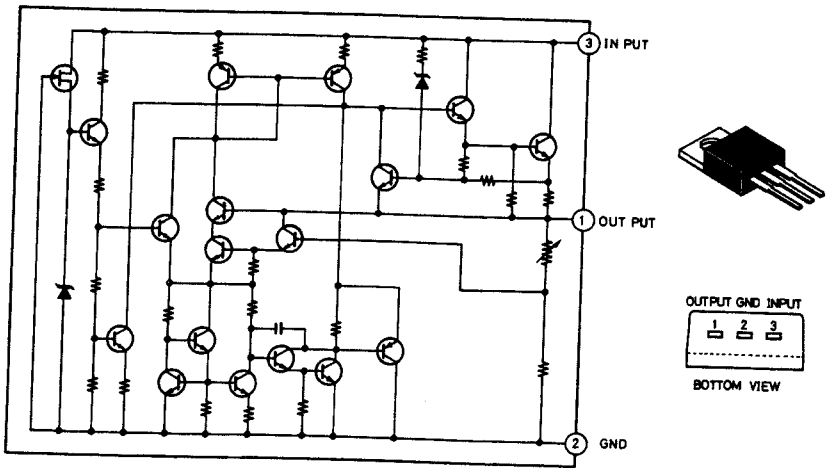
LM324 (OPERATIONAL AMPLIFIERS)



NJM4558 . RC4558
(DUAL HIGH-PERFORMANCE OPERATIONAL AMPLIFIERS)



NJM 78M12 (VOLTAGE REGULATOR)



HOW TO REMOVE THE FLUID CONVECTION RADIATOR (EXCHEANGER).

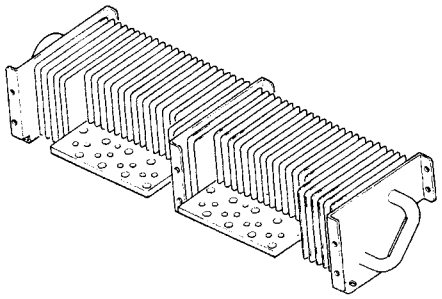
Warning: Freon gas under pressure, do not apply heat or flame to exchanger. Do not puncture tubing.

1) Loosen three screws (106) found between the exchanger (17) and the back panel, and remove these screws together with three plain washers (114).
2) Unscrew two screws (106) found between the exchanger (17) and the bottom lid.
3) By removing screws of Steps 2 and 3, the exchanger (17), PCB's (81 & 82), etc. can be lifted up as a block.
4) Unscrew one screw (106) found between the cover (29) and the bracket. Consequently, the cover (29) comes off.
5) Loosen four screws (115) two screws (106) found between the PCB's (81 & 82) and the bracket (18 & 19), and remove these screws together with two washers (110). Consequently, PCB's (81 & 82) come off.
6) Unscrew six screws (106) found between the brackets (18 & 19) and the exchanger (17). Consequently, the brackets (18 & 19) come off.
7) Loosen 16 screws (102) found between the FET's (58 & 59) and the PCB (83), and remove these screws together with 16 spring washers (112). Consequently, eight pieces off FET's (58 & 59) and two sheets of PCB (83) come off.
8) Unscrew two screws (105) found between the posistor (57) and the exchanger (17). Consequently, two pieces of posistor (57) come off.
9) The exchanger (17) can be removed by carrying out Steps 1 and 8.

NOTES:
- When refitting, do not forget two ceramic condensers (52) and mica sheets of FET's.
- When exchanging do not after the exchanger is cooled down by turning off the power switch (or pulling the AC cord out of the consent).

CAUTIONS ON HANDLING OF THE HEAT LOOP TYPE THERMAL RADIATOR

1) When touching the heat pipe during reassembly or repairing of the set, pay attention not to rupture the pipe, etc.
2) Refrain from storage where exposed to the weather and the direct rays of the sun or where temperature exceeds 60°C.
3) In the case of discarding the set as it no longer becomes usable on account of defective thermal radiator, do not discard the set as it is. First either cut or drill the pipe portion of the thermal radiator with metal saw or drill, for instance, at a well ventilated place to let freon gas and freon liquid out of the pipe, and only then discard the disused set.



BTL (Balanced Transformerless)

BTL refers to a power amplifier circuit to operate speakers connected to the output interval of two sets of SEPP (Single Ended Push-Pull) circuits driven with antiphase.